From:	"Sheldrake, Sean"
To:	"Sheryl Bilbrey (bilbrey.sheryl@epa.gov)" <bilbrey.sheryl@epa.gov>
CC:	"Zhen, Davis" <Zhen.Davis@epa.gov>
BCC:	"Lance Peterson (PetersonLE@cdmsmith.com)" <PetersonLE@cdmsmith.com>
Date:	4/22/2019 4:09:09 PM
Subject:	FW: Gasco Cap Modeling and Long-Term Performance Monitoring Approach deliberative
Attachments:	Gasco Cap Model LT Monitoring Approach_Rev1_042219.pdf

Hello Sheryl, any thoughts on sharing this schematic for long term cap monitoring with the TCT for their feedback per our MOU?

Thank you.

S

Sean Sheldrake RPM, Unit Diver Officer

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From: Ryan Barth <rbarth@anchorqea.com>
Sent: Monday, April 22, 2019 3:03 PM
To: Sheldrake, Sean <sheldrake.sean@epa.gov>
Cc: Gustavson, Karl <Gustavson.Karl@epa.gov>; Clark, Josie <Clark.Josie@epa.gov>; DeMaria, Eva <DeMaria.Eva@epa.gov>; Young, Hunter <Young.Hunter@epa.gov>; Peterson, Lance <petersonle@cdmsmith.com>; rjw@nwnatural.com; jmott@anchorqea.com
Subject: RE: Gasco Cap Modeling and Long-Term Performance Monitoring Approach

Based on a discussion this morning with Lance and Wardah, attached please find a slightly revised schematic (changed one instance of Intermediate to Shallow in the Long-term cap compliance porewater monitoring footnote) on the below deliverable. Please let me know if you have any questions.

Ryan Barth, P.E.
Principal

ANCHOR QEA, LLC

From: Ryan Barth <rbarth@anchorqea.com <mailto:rbarth@anchorqea.com> >
Sent: Thursday, April 18, 2019 5:37 PM
To: Sean Sheldrake <sheldrake.sean@epa.gov <mailto:sheldrake.sean@epa.gov> >
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Subject: Gasco Cap Modeling and Long-Term Performance Monitoring Approach

Sean –

Per action item #4 below, attached please find a schematic with associated footnotes that summarizes NW Natural's proposed cap modeling and long-term performance monitoring approach. This is one of the last remaining technical issues that requires resolution prior to submittal of the Pre-Remedial Basis of Design Technical Evaluations Work Plan and Pre-Remedial Design Data Gaps Work Plan and completion of the comprehensive data gaps sampling, so we look forward to expeditiously discussing any feedback. Please let us know if you would like us to schedule a conference call to discuss this information. Regards.

Ryan Barth, P.E.
Principal

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From: Ryan Barth <rbarth@anchorqea.com <mailto:rbarth@anchorqea.com> >
Sent: Friday, April 5, 2019 12:20 PM

To: Sean Sheldrake <sheldrake.sean@epa.gov <mailto:sheldrake.sean@epa.gov> >; Clark, Josie <Clark.Josie@epa.gov <mailto:Clark.Josie@epa.gov> >; DeMaria, Eva <DeMaria.Eva@epa.gov <mailto:DeMaria.Eva@epa.gov> >; Young, Hunter <Young.Hunter@epa.gov <mailto:Young.Hunter@epa.gov> >; Peterson, Lance <PetersonLE@cdmsmith.com <mailto:PetersonLE@cdmsmith.com> >
Cc: Bob Wyatt <rjw@nwnatural.com <mailto:rjw@nwnatural.com> >; Jen Mott <jmott@anchorqea.com <mailto:jmott@anchorqea.com> >
Subject: Gasco TEWP Comments Meeting - Debrief

EPA Team –

Thanks again for the very productive meeting yesterday to discuss the few remaining technical issues from the EPA comments on the Pre-Remedial Basis of Design Technical Evaluation Work Plan (Work Plan). Our discussion provided a clear path forward on most of these issues along with the following takeaway action items that will allow NW Natural to submit the Final Work Plan later this month (I will let Lance know when to specifically expect it once our schedule is finalized). Please let us know if you have any questions/revisions to these action items. We look forward to finalizing the Work Plan and progressing into pre-remedial design investigation sampling.

1. Use of PTW-NRC thresholds (Specific Comments 5, 32, and 34)

* NW Natural: Summarize the steps to develop and integrate site-specific PTW-NRC thresholds into the ROD decision framework.

2. Use of upland COCs and ROD riverbank soils/sediment CULs for sediment remedy planning and design (General Comment 6 and Specific Comment 5)

* EPA: Discuss this issue with DEQ to determine what DEQ is specifically requesting in this general comment and DEQ's proposed uses for such data.
* NW Natural: Summarize that the full extent of the Gasco property riverbank will be reconfigured and capped. Provide a description of the riverbank design approach that assures any currently erodible soils will be removed, eliminating the need for any additional riverbank SMA delineation. Also, summarize the highly armored design of the Siltronic riverbank and that erodible soils don't exist along this portion of the riverbank.

3. "Hydraulic divide" concept associated with Fill Water Bearing Zone (WBZ) discharge (General Comment 10)

* NW Natural: Reiterate that NW Natural has committed to designing and constructing source control for the Fill WBZ, with construction expected to occur before or concurrently with the sediment remedy after the final riverbank configuration is determined. Also, summarize that NW Natural specifically located seepage meters as close to the toe of the riverbank as feasible given the presence of armor material to measure any shallow Fill WBZ discharge (that will be controlled in the future), so the cap design using this flux data is conservative. Describe how this concept will be detailed in the remedial design process and, per EPA's request, cap modeling will be performed with and without any Alluvium WBZ and Fill WBZ source controls in place to provide a base case for capping protectiveness.

4. Capping point of compliance and performance standards (General Comment 4, Specific Comment 16, and multiple other specific comments)

* EPA: When provided, review NW Natural's schematics for conceptual capping cross-sections in the shallow, intermediate and navigation channel regions and application of the capping point of compliance to each section. The schematic will include the recommended sampling methodologies for the monitoring parameter (porewater) EPA has determined will be used for compliance. Discuss with EPA team whether to retract the requirement to use the porewater data to model reverse equilibrium partitioning to estimate sediment concentrations to compare with soil/sediment CULs. We understand that EPA may also consider whether protection of GW CULS will be protective of riverbank soil/sediment CULs. This is a very important issue to resolve quickly as it could directly impact the forthcoming data gaps sampling scope of work and require a separate sediment COC screening evaluation in the Final Work Plan to determine which of these COCs may drive the cap design. If this modeling is required, the Work Plan and data gaps sampling will be further delayed because of our need to revisit the analytical methodologies and uncertainties in model parameters. Given that it is already April, this would likely eliminate our ability to perform the sampling during this summer window.
* NW Natural: Submit schematics for conceptual capping cross-sections in the shallow, intermediate and navigation channel regions and application of the capping point of compliance to each section. Schematics will include recommended sampling methodologies for porewater.

As a reminder to my email to Sean and Lance on April 3, it would be helpful if the EPA team could also provide the following clarifications copied below:

* General Comment #2. Sediments impacted by past Gasco operations are in a scour area so NW Natural should consider differential bathymetry evaluations addressing scour potential in the project area in future design documents. Additionally, future design documents should address impacts due to the 500-year flood and higher peak flows more common with climate change.

NW Natural Request for Clarification: NW Natural requests clarifications on the locations of the scour area identified in the comment and how this determination was made, and what specific "higher peak flows" should be evaluated due to climate change beyond the 500-year flood event.

* General Comment #5. Section 4.1.3.3 PTW-NAPL Mobility Analyses is lacking details regarding the specific testing approaches and methods being proposed. The Revised Work Plan should outline the proposed testing sequence for assessing principal threat waste (PTW) – non-aqueous phase liquid (NAPL) loading and mobility. As stated in EPA's Comments on NW Natural's Pre-RD Data Gaps Sampling Technical Briefing, EPA expects details of testing approaches and models being utilized for assessing nonaqueous phase liquid (NAPL) mobility and evaluating ebullition as a NAPL migration pathway to be included in the Data Gaps Work Plan which will be reviewed by EPA and its partners. Also include a discussion of the hydraulic head generated from upland sources, whether or not that has been cut off, and the potential for NAPL to daylight when the sediment bed elevation decreases. The hydraulic head will also increase (or backpressure decrease) as water elevations decrease seasonally. These concepts are currently not mentioned. Additionally, EPA understands that similar evaluations are ongoing at a sediment Superfund site in EPA Region 2 (Newtown Creek) and EPA expects that NW Natural will build upon lessons learned at that site.

NW Natural Request for Clarification: NW Natural requests clarification on the portion of the comment that reads, "...the hydraulic head generated from upland sources, whether or not that has been cut off, and the potential for NAPL to daylight when the sediment bed elevation decreases." Please explain what is meant by "hydraulic head generated from upland sources". Regarding the statement "...the potential for NAPL to daylight when the sediment bed elevation decreases" – is EPA asking whether NAPL will become exposed when sediments containing NAPL are impacted by a dredge bucket, or something else?

P.S. I have an action on my personal list to have a 1-hour tutorial with Josie on MS OneNote when I bring her the LWG flood model files. Let me know if anyone else is interested. This program has been a game changer for organizing my life**!**

Ryan Barth, P.E.
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Anchor QEA's Seattle office has moved. Please update your records to reflect our new address.